

AMENDMENTS

Specification Amendments

Please amend the specification as follows:

Substitute the paragraph starting at page 1, line 8, with the following:

This invention generally relates to electronic bill presentment and payment (EBPP) systems and, more particularly, to ~~system and method~~ systems and methods for secure third-party content development and hosting within a financial services network.

Substitute the paragraph starting at page 3, line 1, with the following:

Second, the Visa system is designed to support the presentment of “bills” from corporate billers, and would not accommodate the myriad of financial transactions conducted among and between consumers. Third, these prior art EBPP systems (e.g., Visa, Checkfree, etc.) have not ~~be~~ been designed for interoperability. Currently, there is no solution available to integrate all of the users from these disparate EBPP systems into a common, ubiquitous network.

Substitute the paragraph starting at page 5, line 4, with the following:

Fig. 5 illustrates a block diagram of an example computer system suitable for use to develop content within the third-party content development ~~system~~ systems of Fig. 5 Figs. 4A and 4B;

1 Substitute the paragraph starting at page 6, line 8, with the following:

2 This invention concerns a system and method facilitating personal
3 electronic financial transactions with anyone, including non-users of the system
4 and methods, via an email system. In this regard, the present invention overcomes
5 a number of the limitations commonly associated with the prior art including, in
6 particular, the aggregation problem. It will be appreciated, from the description to
7 follow, that the present invention builds upon an innovative electronic bill
8 presentment and payment system first described in presently pending U.S. Patent
9 Application No. ~~09/XXX,XXX~~, 09/459,219 entitled "Electronic Bill Presentment
10 and Payment System with Bill Dispute Capabilities" filed December 10, 1999 to
11 Remington et al., which is a continuation of U.S. Patent ~~Application No.~~
12 ~~08/734,518~~ (now ~~USP Z,ZZZ,ZZZ~~), ~~entitled Electronic Bill Presentment and~~
13 ~~Payment System No. 6,070,150~~ entitled "Electronic Bill Presentment and Payment
14 System" filed ~~on TBD by Remington~~, October 18, 1996 to Remington et al., the
15 disclosure of which being expressly incorporated herein by reference. In
16 describing the present invention, example network architectures and associated
17 methods will be described with reference to the above drawings. It is noted,
18 however, that modification to the architecture and methods described herein may
19 well be made without deviating from the present invention. Indeed, such alternate
20 embodiments are anticipated within the scope and spirit of the present invention.

1 Substitute the paragraph starting at page 7, line 1, with the following:

2 Fig. 1 illustrates an example network 100 including an innovative financial
3 service center (FSC) 102 including a secure third-party content development
4 system 116. The secure third-party development system 116 enables third-parties
5 (e.g., billers, technical consultants for billers, etc.) to develop content
6 (e.g., application server pages), which is provided to consumers through the
7 innovative FSC 102. Unlike prior art EBPP systems, the secure third-party
8 development system 116 provides billers with substantial control over the form
9 and substance of content provided to consumers via the FSC 102 by allowing the
10 billers to author and/or host a portion of the content provided to the consumers.

11
12 Substitute the paragraph starting at page 7, line 10, with the following:

13 With continued reference to Fig. 1, network 100 is comprised of a number
14 of network participants including consumers 104(a)...(n), billers/businesses
15 106(a)...(n), and financial institutions 108(a)...(n) each communicatively coupled
16 to the FSC 102 via one or more networks 110 and 112. As used herein, networks
17 110 and 112 are intended to represent a wide variety of networks and
18 communication technologies. In this regard, networks 110 and 112 may well
19 comprise, for example, public networks (Internet), private networks (enterprise
20 wide area networks (WAN)), data networks and communication networks (public
21 switched telephony network (PSTN), cellular telephony network, and the like). In
22 this regard, network 100 is intended to represent a composite of any number of
23 networks through which participants can access and benefit from the innovative
24 services of FSC 102. Due to the confidential nature of the information and
25

1 transactions, however, security measures are taken when communicating over
2 public networks. According to one embodiment, for example, when the user is
3 communicating with the FSC 102 via the Internet, FSC 102 employs the well
4 known secure HyperText Transfer Protocol (HTTPS).

5
6 Substitute the paragraph starting at page 7, line 26, with the following:

7 It will be appreciated that each of the network participants accesses and
8 utilizes the resources of network 100 through a computing platform. Accordingly,
9 consumers 104(a)...(n) are depicted ~~communicative~~ as communicatively coupled
10 to network 100 via computing devices 114(a)...(n), respectively. Similarly,
11 businesses 106(a)...(n), financial institutions 108(a)...(n), and third-party content
12 developer 126 also access the resources of network 100 through one or more
13 computing devices. For ease of illustration and explanation, the computing
14 interface for billers/businesses 106, financial institutions 108 and third-party
15 content developer 126 have been omitted from Fig. 1 so as to not obscure the
16 innovative aspects of the present invention. For purposes of this discussion, use of
17 the term “consumer”, “business”, “financial institution”, “user” or “network user”
18 are each intended to represent the respective entity as well as a suitable computing
19 interface.
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1 Substitute the paragraph starting at page 10, line 12, with the following:

2 As shown, billers/businesses 106(a)...(n) may access (and be accessed
3 from) FSC 102 via the network in any of a number of alternate means. According
4 to one implementation, business 106(a) may utilize a legacy biller integration
5 system (BIS) 122 to send batch billing statements to FSC 102 for presentment to
6 and payment by consumers 104(a)...(n). According to one innovative aspect of
7 the invention, billers 106(a-n) incorporating the teachings of the present invention
8 may utilize a "thin" batch billing schema, to be described more fully below.
9 Examples of innovative EBPP systems incorporating BIS technology are provided
10 in U.S. Patent ~~Application No. 08/734,518 to Remington, No. 6,070,150 to~~
11 ~~Remington et al. described above; U.S. Patent Application No. 08/YYY,YYY to~~
12 ~~Campbell, et al., entitled System and Method for Designing Responses for~~
13 ~~Electronic Billing Statements; U.S. Patent Application No. 08/ZZZ,ZZZ No.~~
14 ~~6,128,603 to Dent, et al., entitled Consumer-Based System and Method for~~
15 ~~Managing and Paying Electronic Billing Statements; U.S. Patent No. 08/880,125~~
16 ~~to Campbell, et al., entitled System and Method for Designing and Distributing~~
17 ~~Customized Electronic Billing Statements; U.S. Patent Application No.~~
18 ~~08/BBB,BBB No. 6,304,857 to Heindel, et al., entitled Distributed Electronic~~
19 ~~Billing System with Gateway Interfacing Biller and Service Center; and U.S.~~
20 ~~Patent Application No. 08/CCC,CCC 09/093,958 to Keith, et al., entitled Parcel~~
21 ~~Manager for Distributed Electronic Billing System the disclosures all of which~~
22 being expressly incorporated herein by reference.

Substitute the paragraph starting at page 11, line 7, with the following:

Figs. 2A and 2B illustrate two embodiments of a secure third-party content development system 116 suitable for use within FSC 102 in accordance with teachings of the present invention. With respect to Fig. 2A, secure third-party development system 116 is shown comprising operational controller 202, content development interface 204, validation agent 206, a production interface 208, network consumer interface(s) 210, memory 212 and, optionally, applications(s) 214, operatively coupled as depicted. It is to be appreciated that although depicted as separate functional elements in a hardware paradigm, one or more of the elements may well be combined (e.g., content development interface 204 and validation agent 206) and these innovative functions may well be implemented (in whole or part) in software executing on a computing platform.

Substitute the paragraph starting at page 13, line 20, with the following:

Fig. 2B illustrates an alternate embodiment of example secure third-party development system 116. In accordance with the network diagram of Fig. 2B, secure development system 116 is comprised of a distributed network of servers implementing the features and functions described above. Accordingly, the reference identifiers used in Fig. 2A map to their functional equivalent in Fig. 2B.

1 Substitute the paragraph starting at page 15, line 19, with the following:

2 As shown, computer 102 operates in a networked environment using
3 logical connections to one or more remote computers, such as a remote computer
4 176. The remote computer 176 may be another personal computer, a personal
5 digital assistant, a server, a router or other network device, a network “thin-client”
6 PC, a peer device or other common network node, and typically includes many or
7 all of the elements described above relative to computer 102, although only a
8 memory storage device 178 has been illustrated in ~~Fig. 2~~ Fig. 3.

9
10 Substitute the paragraph starting at page 15, line 26, with the following:

11 As shown, the logical connections depicted in ~~Fig. 2~~ Fig. 3 include a local
12 area network (LAN) 180 and a wide area network (WAN) 182. Such networking
13 environments are commonplace in offices, enterprise-wide computer networks,
14 Intranets, and the Internet. In one embodiment, remote computer 176 executes an
15 Internet Web browser program such as the “Internet Explorer” Web browser
16 manufactured and distributed by Microsoft Corporation of Redmond, Washington
17 to access and utilize online services.

1 Substitute the paragraph starting at page 18, line 22, with the following:

2 Fig. 4B illustrates an alternate embodiment of example content authoring
3 system 400. In accordance with network diagram of Fig. 4B, content authoring
4 system 116 is comprised of a distributed network of computing systems
5 implementing the features and functions described above. Accordingly, the
6 reference identifiers and description associated with the elements of Fig. 4A map
7 to their functional equivalent in Fig. 4B.

8
9 Substitute the paragraph starting at page 19, line 9, with the following:

10 As described above, except for its interaction with secure third-party
11 development system 116 in developing publishable content for FSC 102, computer
12 system 102 is intended to represent a wide variety of computing devices known in
13 the art. Similarly, the functional blocks ~~402-426~~ 502-516 shown in Fig. 5 are each
14 intended to represent any of a plurality of devices that perform these functions
15 and, thus, need not be described further.

1 Substitute the paragraph starting at page 21, line 20, with the following:

2 Fig. 7 illustrates a flow chart of an example method for secure third-party
3 development of FSC content, according to one embodiment of the invention. As
4 shown, the method begins with block 702, wherein a biller development account is
5 created on secure development system 116. More specifically, a biller
6 administrator accesses ops server 202 to establish a biller development account.
7 In response, ops server 202 creates development ~~accounts~~, accounts and
8 directories, and updates access control lists (ACLs) on staging server 204 to
9 facilitate such development. Before a developer can begin using the secure
10 development system 116, however, biller administrator must add the certs
11 uniquely identifying authorized third-party developers to the ACLs.

12
13 Substitute the paragraph starting at page 22, line 19, with the following:

14 If, in block 708 validation agent determines that the developed content is
15 acceptable, the content is propagated at block 712 to a working directory for that
16 content on the production server 208, which also populates one or more web
17 server(s) with the content for consumer testing. Before further consumer
18 validation testing may be performed, ops server 202 must be given network
19 address(es) to map to the newly developed content, at block 714. In response, ops
20 server 202 provides the network address information to SQL server 212, which
21 updates its database of network addresses.

1 Substitute the paragraph starting at page 23, line 4, with the following:

2 In block 716, simulated consumer testing is performed by user test
3 platforms 410(a-n) to identify any latent problems that a consumer might
4 encounter using the third-party developed content. If problems are identified,
5 ~~block 718~~, the files are automatically removed from the production and web
6 servers at block 718, as the debug process continues from the working directory of
7 the staging 204 or production 208 servers. Note, validation testing of modified
8 content may be required before the developed content can be promoted to and
9 propagated from the production server 208, or before additional consumer testing.

10
11 Substitute the paragraph starting at page 23, line 12, with the following:

12 If, ~~in block 718~~, the consumer testing of the developed content failed to
13 identify any errors at block 718, the developed content is promoted to the
14 publication directory of the production server 208, and is ready for production
15 status at the authorization of the biller administrator. According to certain
16 implementations, additional manual controls may restrict production publication
17 of newly developed third-party content until FSC technical/administrative staff
18 have manually reviewed the content, e.g., using consumer test platforms 410. If
19 errors are identified at block 718, the corrupted files are deleted from the
20 production/ Web servers at block 720.

1 Substitute the paragraph starting at page 23, line 25, with the following:

2 If, ~~in block 724~~, development is complete at block 724, ops server 202
3 disables the biller development account and breaks all cert ~~mapping~~, mapping at
4 block 726. According to one embodiment, ops server changes the password and
5 privileges associated with the biller development account, forestalling any further
6 access by biller or associated third party developers. In addition, ops server 202
7 removes the associated certs from ACLs associated with the biller.

8
9 Substitute the paragraph starting at page 24, line 25, with the following:

10 Fig. 11 illustrates a flow chart of an example method for validating third-
11 party developed content, according to one embodiment of the invention. As
12 shown, the method begins at block 1102 with invocation of validation agent 206
13 by a developer or biller administrator, ~~block 1102~~. In block 1104, validation agent
14 206 analyzes code comprising the third-party content for conflicts, ASP errors,
15 security problems, etc., and makes a determination in block 1106 whether the
16 content is technically error free.

17
18 Substitute the paragraph starting at page 25, line 5, with the following:

19 If the content contains errors, validation agent 206 generates a report
20 identifying failing content files and the location and cause of the failure at block
21 1108. In addition, as introduced above, validation agent 206 deletes the files from
22 the validation directory of the staging server 204.

1 Substitute the paragraph starting at page 25, line 9, with the following:

2 If, in block 1106, validation agent 206 determines that the third-party
3 content is free from ASP and other errors, validation agent 206 instructs the user
4 that the content passed validation testing at block 1110. According to one
5 embodiment, validation agent will prompt the developer or biller administrator
6 whether they wish to promote the validated files to the production server and
7 propagate the files to the web server(s), at block 1112. If so, the files are so
8 promoted and propagated by the validation agent 206 at block 1114.

9
10 Substitute the paragraph starting at page 26, line 1, with the following:

11 In block 1204, the batch billing data including at least a representation of
12 the authentication strings is sent to FSC 102. According to one embodiment,
13 introduced above, the batch billing data adheres to a thin batch billing schema,
14 wherein minimal information is provided to the FSC 102 in the batch billing
15 statement, thereby reducing the amount of confidential information that is
16 transmitted outside biller system 106. According to one embodiment, only a biller
17 identifier, summary bill data including a consumer identifier, and the
18 authentication codes are sent in the thin batch billing schema.

1 Substitute the paragraph starting at page 26, line 13, with the following:

2 In block 1208, a requesting registered user is provided with minimal bill
3 detail in an FSC generated summary page. From this summary page, the
4 registered user could pay the bill, completing the transaction without any further
5 review of bill data. If, in block 1210, the user requests detailed bill information,
6 the summary page (authored either by FSC 102, biller 106, or third-party
7 developer 126 to denote biller hosted bill-detail), FSC 102 redirects the user's
8 browser to billers system 102 providing the authentication codes as a means of
9 authenticating the registered user's access to the requested detailed billing
10 information, at block 1212. According to one embodiment of the invention, the
11 redirection to and authentication with the billers system is hidden from the view of
12 the registered user. According to one implementation, FSC 102 provides the user
13 with an indication that the requested information is being retrieved.

14
15 Substitute the paragraph starting at page 26, line 25, with the following:

16 If, in block 1214, billers system is unable to authenticate the registered user
17 given the provided authentication strings, billers system 106 rejects the access
18 request, and FSC 102 provides the user with an error message at block 1216.
19 Alternatively, if billers system 106 authenticates the registered user, a composite
20 billing user interface is generated comprising FSC generated content and biller
21 generated content, at block 1218.

Substitute the paragraph starting at page 27, line 13, with the following:

Fig. 14 graphically represents an example bill summary user interface (UI) 1400, according to one embodiment of the present invention. As shown, the UI includes a top navigation/function bar 1402 and a left navigation/function bar 1404. As introduced above, these elements are authored and hosted by FSC 102. In addition, UI 1400 includes lower frame 1406, which includes an advertising banner 1408 and bill summary information 1410. According to one embodiment, the lower frame 1406 is authored by biller 106, but hosted from FSC 102. There may be a number of advantages to hosting summary pages from FSC 102. First, by hosting summary page UI 1400 from FSC 102, it protects the consumer (and the biller) from an unavailable biller computer system. That is, if the biller system 106 goes down, a consumer would be unable to access their account ~~with biller~~. If the information is hosted by FSC 102, and if the biller computer system 106 goes down, the consumer can still complete payment transactions without having to access the billers site (e.g., to review detailed information).